

Notice of Allowability

Application No.

10/605,891

Examiner

Joseph Nguyen

Applicant(s)

LANDIS, HOWARD S.

Art Unit

2815

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed 08/31/2005.
2. ☒ The allowed claim(s) is/are 1-17 and 30-33.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Regarding claims 10-12, delete "0.1 microns" in line 12 and insert "0.1 micron".

Regarding claim 10, delete "are " in line 17 and insert "is".

Allowable Subject Matter

Claims 1-17 and 30-33 are allowed.

The following is an examiner's statement of reasons for allowance:

The reference (s) of record do not teach or suggest, either singularly or in combination at least the limitation of "the interconnect being in contact with a portion of the first rigid dielectric layer and with a portion of the second rigid dielectric layer; a structural securing means associated with the first non-rigid dielectric wiring, the structural securing means connecting together the portions of the first and second rigid dielectric layers above and below the first non-rigid dielectric wiring level so that the portions of the first and second rigid dielectric layers adjacent the interconnect are prevented from de-layering from the interconnect; and a low k dielectric layer having

Art Unit: 2815

dummy fill shapes arranged above the second rigid dielectric layer” for claim 1, “dummy fill shapes associated with the first non-rigid dielectric wiring level for preventing a portion of the first or second rigid dielectric layers adjacent the interconnect from delayering from the interconnect; a low k dielectric layer having dummy fill shapes arranged above the second rigid dielectric layer; the interconnect having a line width from 0.1 microns to greater than 1 micron; and the dummy fill shapes being adjacent to the interconnect, being an alloy substantially composed of one of aluminum, copper and tungsten, and being electrically isolated from each other and the interconnect, wherein a minimum spacing between the dummy fill shapes is one to four times a minimum spacing for ordinary wires on the first non-rigid dielectric wiring level ” for claim 10; “a low k dielectric layer having dummy fill shapes arranged above the second rigid dielectric layer; the interconnect having a line width from 0.1 micron to greater than 1 micron; and the dummy fill shapes being adjacent to the interconnect, being an alloy substantially composed of one of aluminum, copper and tungsten, and being electrically isolated from each other and the interconnect, wherein a minimum spacing between the dummy fill shapes is equal to a minimum spacing width for ordinary wires on the first non-rigid dielectric wiring level” for claim 11; “a low k dielectric layer having dummy fill shapes arranged above the second rigid dielectric layer; the interconnect having a line width from 0.1 micron to greater than 1 micron; and the dummy fill shapes being adjacent to the interconnect, being an alloy substantially composed of one of aluminum, copper and tungsten, and being electrically isolated from each other and the interconnect, wherein a density of the dummy fill shapes is between approximately 45%

Art Unit: 2815

and 50%" for claim 12; "forming a plurality of dummy metal fill shapes in the first non-rigid dielectric wiring level in proximity to the interconnect, wherein the interconnect is in contact with a portion of the first rigid dielectric layer and with a portion of the second rigid dielectric layer; and preventing with the dummy metal fill shapes, the portions of the first and second rigid dielectric layers adjacent the interconnect from de-layering away from the interconnect" for claim 30; "forming a plurality of dummy metal fill shapes in the first non-rigid dielectric wiring level in proximity to the interconnect for preventing a portion of the first or second rigid layer adjacent the interconnect from de-layering away from the interconnect, wherein the forming of the plurality of dummy fill shapes includes forming a density of approximately 45% to 50%" for claim 31.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph Nguyen whose telephone number is (571) 272-1734. The examiner can normally be reached on Monday-Friday, 7:30 am- 4:30 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Thomas can be reached on (571) 272-1664. The fax phone number for

Art Unit: 2815

the organization where this application or proceeding is assigned is (571) 273-8300 for regular communications.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JN

October 26, 2005.


JEROME JACKSON
PRIMARY EXAMINER